

## APPRAISAL OF PROJECT CLOSEOUT

*Abdalla, Ahmed Abdelrahman*

*Department of Civil Engineering, Faculty of Engineering, Alexandria University, Alexandria, Egypt*

### ABSTRACT

*It's important for companies to evaluate their project and it's supposed to improve the performance, quality, to provide data needed for any future projects and to help the company developing the quality and the performance in order to meet and satisfy customer expectations by learning lessons from previous problems and to evaluate the decisions that were made in the past.*

**KEYWORDS:** *Construction Management, Evaluation Criteria, Project Closeout, Project Appraisal*

---

### Article History

**Received: 20 Apr 2018 / Revised: 28 Apr 2018 / Accepted: 12 May 2018**

---

### INTRODUCTION

Evaluation is an important process which should be always accomplished by companies to monitors the aspects of their projects, and to learn lessons from the past's problems and obstacles. Collecting data during the project process is a very good to achieve evaluation accuracy and it will be used to determine company's decisions over time. Performance should be measured and compared to company's objectives. The results of evaluation performance provide information on how current and future company projects are working and how to benefit from resources which are made and allocated to meet the company's efficiencies and effectiveness standards in the future projects.

### METHODS OF DATA TREATMENT

Every process in the project has to be evaluated according to its nature. There're two methods to represent different ways data can be collected and used to inform your evaluation and you can as well use a mix between the two methods to gain better results;

#### Quantitative Method

Quantitative methods is a tool to discover and recognize the meaning individuals or groups ascribe to a social or human problem and it's method that specifies numerical assignments to explain, predict, and/or control the phenomena under study [4]. It gives as well results and data in the form of numbers [3]

#### Qualitative Method

Qualitative Method use narrative or descriptive data rather than numbers which are stated in prose or textual forms [3]. This methods include: (1) Analysis of documents and texts (2) In-depth interviews (3) Case studies. (4) Observation [4]

### **Mixed-Method Approach**

A multi method approach to evaluation can increase both the validity and the reliability of evaluation data. Combining the two methods pays off in improved instrumentation for all data collection approaches and in sharpening the evaluator's understanding of findings [22]

## **FOCUS AND CONSIDERATION**

### **Relevance**

The appropriateness of project objectives to the problems that it was supposed to address, and to the physical and policy environment within which it operated, and including an assessment of the quality of project preparation and design – i.e. the logic and completeness of the project planning process, and the internal logic and coherence of the project design [7]

### **Effectiveness**

Every project discipline has generic and project-specific best practices that are critical to successfully completing a project. Determination of success at this level considers the appropriateness of the processes used, their alignment with the project's purpose, and their integration and effectiveness in contributing to the project outcomes. [18] It's also extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance. In order to evaluate the effectiveness of these changes the team looked for ways to quantify the results that will be received from the project scoping process. [7] Assure the owner and architect/engineer representatives that all work on the project will be completed in a timely manner and at a level of quality in accordance with the contract documents. [16]

### **Efficiency**

Efficiency is a measure of how well an organization is maximizing its output while using minimal inputs. Overall efficiency of a firm can be broken down into two major components: technical and allocative efficiency: (1) Technical efficiency exists when a unit is producing a level of output using the minimal amount of inputs. An organization is technically efficient if it is not possible to produce more output without increasing at least one of the inputs. (2) Allocative efficiency on the other hand, measures the extent to which a firm uses the various factors of production in the best proportions, in view of their prices. It measures an organization's ability to use the optimal mix of inputs to produce the given output given the respective prices of each input [2]

This is about how the outputs and/or desired effects have been achieved with the lowest possible use of resources/inputs. The fact that the Results have been achieved at reasonable cost, i.e. how well inputs/means have been converted into Results, In terms of quality, quantity and time. [7]

### **Sustainability**

In general terms, sustainability refers to the long-term availability of the means required for the long-term achievement of goals. In other words, does the project result in external effects which influence the environment and hence long-term development opportunities elsewhere, or does it affect economic systems and ecologically relevant economic behavior elsewhere [17]

### Impact

Organizational benefits are assessed by external stakeholders such as investors, competitors, industry analysts, or regulators, rather than company insiders. Strategic success may be planned or emergent.[18]

Positive and negative, primary and secondary long-term effects directly or indirectly, intended or unintended. The effect of the project on its wider environment, and its contribution to the wider sectorial objectives summarized in the project's Overall Objectives, and on the achievement of the overarching policy objectives of the evaluation committee [7]

### Coherence

Which activities undertaken to achieve its development policy objectives without internal conflict or without conflict with other Community policies. Extent to which they complement partner country's policies and other donors' interventions. [7]

This is the traditional criterion of project success, determined on closeout against key project design parameters such as the project schedule, budget and some performance expectations such as completing all planned stages and activities. It includes measures relating to the deliverable such as its match to specifications, requirements, and quality expectations and to client/user satisfaction such as product acceptance, use, and effectiveness. [18]

## EVALUATION ASPECTS

The team decided to use the following steps to analyze and improve the project scoping process: [10]

### People

This is an overview of how project members 'feel 'about project performance over a period of time: (1) Working relationships with client, contractors, other design team consultants previously and at the present (2) Management team in terms of suitability, experience, performance, labor relationships and confidence in work force (3) Level of communications within the contractor organization [11]

### Cost

Project cost performance is used to show how well the project adheres to the agreed budget. It is important because resources are often limited and cost overruns are to be avoided. [10] As suggested by the experts, there're some factors affecting the project cost control: (1) Client financial ability (2) Project finance method (3) Interim Payments (4) Variation Orders (5) Cost and Prolongation Claims (6) Final Account Forecasts. (7) Submission of early proposals for costing or cost planning (8) Estimation method and cost control technique (accuracy and reliability) (9) Record of payments to sub-contractors (10) Material prices, availability, supply, quality and imports [11]

### Time Constraints

Time monitoring seeks to assess how well the project adheres to the planned schedule over a period of time.[23]Three areas of time management are given special attention: achievement of critical dates, achievement of milestones, and the turnaround time for submission in the period. (1) Priority on construction time and deadline requirements (2) Completeness and timeliness of project information (design, drawings, specifications) [11]

## Quality

The quality category helps to ensure that projects will achieve the quality standard set out in the contract. It should therefore cover the areas of (1) Quality control (2) The number of non-conformance report (3) works rejection rates (4) survey rejection rates. (5) Client requirements on quality (6) Quality of design and specifications (7) Inspection, testing and approval of completed works (toughness / requirements) [11] (8) Material product data sheets (9) Testing procedures and instrumentation - Testing procedures and the required listing of instruments, including calibration (10) Quality Assurance/Quality Control reports should be provided to not only the owner but also to the performing contractor [16] This seeks to assess how the project adheres to the project specifications, deliverables and scope. Right from the onset, a project has set targets or deliverables to be met within certain quality expectations. [23]

## Safety and Health

We should determine the factors that contributed to the accident causation Human error Behavior models picture workers as being the main cause of accidents. [14]. The Safety and Health category covers four key areas: (1) Monitoring and Compliance (2) Education and Training (3) Inspection and Audit (4) Complaints and air pollution. [10] For instance: (1) Accidents on sites record (2) Site conditions / site topography (3) Government regulations or policies regarding health and safety. [11] Workers may suffer different degrees of injury and additional costs may be required to deal with the accident. [13]

## Client Satisfaction

Understanding the customer's requirements is essential in ensuring customer satisfaction, and the demand for the construction product must be viewed in relation to the intended use of the facilities [15] The Client Satisfaction category is designed to seek the clients' degree of satisfaction with the project performance. [10]. Ahmed and Kangari used six client-satisfaction factors, including (1) Time (2) Cost (3) Quality (4) Client orientation (5) Communication skills (6) Response to complaints. They concluded that these six factors are equally important when evaluating client satisfaction. [12]

## Communication

The Communication category is used to assess the effectiveness of communication among project participants as suggested by the number of (1) Meetings held (2) Requests for information (3) Correspondences measured. [10] (4) Level of communications within the contractor organization [11]

## External Factors

(1) Interest rate / inflation rate (2) Stability of market conditions (3) Level of competition and level of construction activity (4) Weather condition [11]

## APPRAISAL COMMITTEE

The committee will assume responsibility for carrying out a review of the business plan submitted and make a determination on how the plan meets or does not meet the evaluation criteria set out later in this document. Although additional technical or financial advice may be sought by either of the parties, it is intended that they work together as a team to establish consensus on the evaluation.[19]. The ideal group includes people directly involved with the project on a day-to-day basis who will have decision-making authority during the course of the project.[6]. The evaluation team also

had to decide on a strategy that would be used to accomplish its mission. [5]

### **Project Manager**

The project manager is responsible for (1) Archiving project documentation. (2) Obtaining deliverable sign-off. (3) Assessing customer satisfaction (4) Capturing lessons learned (5) Debriefing team members. (6) Completing performance evaluations. [9] (7) In charge of the project from concept to close out, central point of contact for the project. (8) Acquires funding. (9) Develops timelines. (10) Hires consultants and controls deliverables. (11) Defines programmatic outputs. (12) In charge of final selection documents. (13) Oversees the development of evaluation criteria. (14) Selects members of the Selection Committee. (15) Makes all project decisions that are not technical

### **Project Engineer**

The project engineer is responsible for (1) In charge of any technical requirements of the project (2) He will be the main decision maker for the City regarding technical design. (3) Reviews all technical specifications and makes decisions regarding the City's choice on design elements. (4) Is not a consultant

### **Construction Manager**

(1) In charge of managing the construction of the project. (2) Helps make decisions about cost categories as they relate to field management. (3) Is involved in the design portion of the project to assist with constructability analysis

### **Industry Expert**

(1) Highly specialized professional in either project design or conceptual development or project delivery (2) Responsible for the technical design of the project (3) There is no limit on how many a team may need or want and should be dictated by the specific needs of the project. The number and type of designers and/or industry experts should be dictated by the specific needs of the project and can be a combination of agency personnel and consultants.

### **Consultant**

He is responsible for (1) Guide Project Team with the solicitation process and project delivery. May add to the experience of the team if experience is lacking or low. (2) Project Team's consultant will not take part in the evaluation of any proposals. (3) The Consultant is hired at the sole discretion and expense of the Administering Department.

### **Administering Department**

The Department should name its internal expert who can manage and knowledgeably assist. The department can also hire a consultant to be their internal expert.

## **PROCESS SEQUENCE**

### **Planning for the Evaluation**

Rossi, Freeman, and Lipsey (1999, 436) propose five guidelines for maximizing the use of evaluation results: (1) evaluators must understand the cognitive styles of decision makers, (2) evaluation results must be timely and readily available when needed, (3) evaluations must respect stakeholders' program commitments, (4) the subsequent use and dissemination plans should be part of the evaluation design, and finally (5) evaluation should include an assessment of future utilization [21] The company should create an evaluation committee. This committee should schedule a meeting to perform the Evaluation after the close-out of the project. [5]

## Collecting Documents

Without data on what is being accomplished, we have little or no foundation for decision-making or improvement. Without data, anyone's opinion is as good as anyone else's. "Common knowledge" is notoriously unreliable for decision-making. [20]

## Data Preparation

Preparing and providing an (1) Acceptable Construction Management Business Plan (2) outlining the implementation (3) resourcing and management of the project, as part of the formal submission for preliminary project approval are required for review by the Evaluation Team. [19] This documentation should include (1) As-built drawings (2) operation and maintenance manuals (3) Warranties (4) Lien releases, etc. [16] One of the team members collects the set of basic official documents which include (1) Completed, up-to-date project schedules (2) Quality Checklists, [9] (3) All resources mobilized (4) Owner's intervention (5) Modifications (6) Detailed description of the project including programmatic and performance (7) Technical requirements and specifications when available (8) Funding sources including grant documents or loan contracts (9) Project Team After collecting documents, they should be forwarded the completed Evaluation to the IT project coordinator who will attach the performance evaluation to the professional and consultant entry in the master database for future reference. [8]

## Data Reviewing

The evaluation team consults all relevant management and monitoring documents/data bases so as to acquire a comprehensive knowledge of the project/program covering: (1) Full identification (2) Resources planned, committed, disbursed (3) Progress of outputs (4) Names and addresses of potential informants (5) Ratings attributed through the "result-oriented monitoring" system (6) Availability of progress reports and evaluation reports, if relevant.

## DATA ANALYSIS

### Project Organization

(1) Proposed team is meeting the requirements of the project (2) Presentation of an organizational chart/staffing plan and reporting relationships (3) Roles and responsibilities of each project team member defined, including responsibility for budgets, schedules, project reporting and project risks (4) available resources (5) procedures for planning (6) Cost analysis (7) scheduling (8) Estimating (9) cost control (10) Tendering, etc. [19]

### Resourcing Plan

(1) construction cost estimates including contingencies and cash flow projections (2) Engineering/architectural design fees and estimated fees during construction (3) Construction management and project management design fees and estimated fees during construction (4) Costs for each contract or value of services to be obtained locally (5) value of materials to be purchased both locally and outside the community (6) anticipated schedule of resourcing requirements [19] (7) Engineering/Architectural fees during construction (8) Construction Management costs during construction (9) Bonding and warranty details (11) Comparing the Initial Cost with the final cost. [7]

## FINAL DECISION

Before making the final selection, the committee may authorize technical experts to review specific aspects of the submittals and provide input to the committee members. In order to maintain the integrity and credibility of the committee,

it is important that the evaluation committee have full and independent authority to make a final selection [6]

### Identifying Project Success or Failure

The definition of a project has suggested that there is an orientation towards higher and long-term goals. Important parameters within the goals will be return on investment, profitability, competition and market ability. A range of variables and factors will affect the ability to achieve these goals a realistic goal; (1) Competition;(2) Client satisfaction (3) A definite goal (4) Profitability (5) Third parties (6) Market availability (7) the implementation process (8) the perceived value of the project [1]

Measures of success are the criteria that we believe show the impact of our work. Measures of success should tell us the following about whether our goals: (1) Achieved results we expected (2) Produced results we didn't want or expect should be changed should continue or not should be measured in other ways [20]

### Archiving Data

Once the project manager has completed the administrative closure, all project information should be sent to the repository for future reference, if needed. This information will be used on future projects to assist other project managers and team members by eliminating previously encountered problems. [9]

Lessons can be learned from each and every project, even if the project is a failure. Some companies do not document lessons learned because employees are reluctant to sign their names to documents that indicate lessons learned were from mistakes or from a failed project. [9]

### Firms Exclusion

Firms receiving an unsatisfactory mark will be considered for removal from the master listing of firms that receive for future projects.

### FORMAL REPORT OUTLINE

Finally, the information needs to be provided in a manner and style that is appropriate, appealing, and compelling to the person being informed. Different reports may have to be provided for the different audiences, and it may well be that a written report is not even the preferred alternative, however here's the outlines if a formal evaluation report;[22]

### FORMAL REPORT OUTLINE

**(1)SUMMARY SECTIONS:** Abstract B. Executive summary

**(2)BACKGROUND:** (1) Problems or needs addressed (2) Literature review (3) Stakeholders and their information needs (4) Participants (5)Project's objectives (6) Activities and components (7) Location and planned longevity of the project (8) Resources used to implement the project (9) Project's expected measurable outcomes (10) Constraints

**(3) EVALUATION STUDY QUESTIONS :**(1) Questions addressed by the study (2) Questions that could not be addressed by the study (when relevant)

**(4) EVALUATION PROCEDURES :**

**4.1 Sample**(Selection procedures - Representativeness of the sample -Use of comparison or control groups, if

applicable )

**4.2 Data collection :**(Methods -Instruments )

**4.3 Summary Matrix:** (Evaluation questions -Variables -Data gathering approaches -Respondents -Data collection schedule

**(5) FINDINGS:**Results of the analyses organized by study question

**(6) CONCLUSIONS :** ( Broad-based, summative statements -Recommendations, when applicable )

## CONCLUSIONS

Project appraisal and evaluation is an important matter that should be handled with great accuracy as it always define the problems faced during construction and how it was faced or how it supposed to be eliminated and it also indicates quality and performance that was achieved. Choosing the correct method with the optimal criteria can give the company a very accurate decisions and feedbacks. Refining your contractors and suppliers lists becomes easier when you made your evaluation after every project and it also makes you able to determine which part of the project is under expectations and should be terminated from your list.

## REFERENCES

1. A.K Munns, B.F Bjeirmi,(1996) *The role of project management in achieving project success, International Journal of Project Management* Vol. 14, No. 2, pp. 81-87,
2. Peter Pilateris,(2000) *The evaluation of contractors based on financial data using data envelopment analysis, University of Toronto*
3. Sabine Garbarino, Jeremy HollandMarch (2009), *Quantitative and Qualitative Methods in Impact Evaluation and Measuring Results*
4. N. Azmy, (2012),*The Role of Team Effectiveness in Construction Project Teams and Project Performance*
5. *Implementation of Recommendations for Project Scoping*, (April 2013), Missouri Department of Transportation,
6. *CM/GC Guidelines for Public Owners*, (2007), the Associated General Contractors of America, The National Association of State Facilities Administrators, second edition
7. *Evaluation methods for the European Union's external assistance*, (2006) Office for Official Publications of the European Communities, Volume 3
8. Heng Li, ZahirIrani, Peter E.D. Love, (2000), *the IT Performance Evaluation in the Construction Industry, Proceedings of the 33rd Hawaii International Conference on System Sciences*
9. *Project Management Methodology Guidebook*, Chandler, Arizona
10. Sai On Cheung, Henry C.H. Suen, Kevin K.W. Cheung, (2004), *PPMS: a Web-based construction Project Performance Monitoring System, Automation in Construction* 13
11. T.M.S. Elhag, A.H. Boussabaine, (1999), *Evaluation of Construction Cost and Time Attributes, School of Architecture and Building Engineering, the University of Liverpool, Liverpool L69 3BX, UK*



12. Jyh-Bin Yang, Sheng-Chi Peng,(2006), *Development of a customer satisfaction evaluation model for construction project management*, Institute of Construction Management, Chung Hua University
13. Wei-Chih Wang, Jang-Jeng Liu, Shih-Chieh Chou,(2005) *Simulation-based safety evaluation model integrated with network schedule*, National Chiao Tung University
14. Tariq S.Abdelhamid, John G. Everett,(January/February 2000), *Identifying root causes of construction accidents*, *Journal of construction engineering and management*
15. [15] Sami K?rn?, *Analysing customer satisfaction and quality in construction – the case of public and private customers*, Helsinki University of Technology
16. *Guidelines for a Successful Construction Project*,(2003)The Associated General Contractors of America/American Subcontractors Association,
17. Michiel J F van Pelt ,ArieKuyvenhoven, Peter Nijkamp,(September 1990), *Project appraisal and sustainability: methodological challenges*, *Project Appraisal*, volume5, number3
18. PAUL L. BANNERMAN, *DEFINING PROJECT SUCCESS: A MULTILEVEL FRAMEWORK*, NICTA, (2008), Australian Technology Park, Sydney, Australia
19. *Operational Parameters for the Review and Evaluation of Construction Management Projects*, 2010, Aboriginal Affairs and Northern Development Canada
20. Kathleen A. Paris,(2000), *Creating Measures of Success for Your Plan*, University of Wisconsin, Version 1.1
21. Vitor Oliveira, Paulo Pinho, (2010), *Evaluation in Urban Planning: Advances and Prospects*, *Journal of Planning Literature*
22. Frechtling, Joy, (January 2002),*The 2002 User-Friendly Handbook for Project Evaluation*, National Science Foundation
23. Andove Wilson Mwangi, Mike AmuhayaIravo,(March 2015). *How Monitoring and Evaluation Affects the Outcome of Constituency Development Fund Projects in Kenya: A Case Study of Projects in Gatanga Constituency*, *International Journal of Academic Research in Business and Social Sciences*, Vol. 5, No. 3

## AUTHORS DETAILS



**Abdalla, Ahmed Abdelrahman**, Department of Civil Engineering, Faculty of Engineering, Alexandria University, Alexandria, Egypt

